

Sheet 5

1. Mathematical expressions and programming language statements can contains delimiters such as "(", "{", or "[". The statement or the expression is usually considered as syntactically correct if the delimiters are balanced, otherwise it's incorrect. Write a C# console program that accept an expression and check if the delimiters in the expression are balanced or not using a stack.
2. Write a C# program that converts an infix mathematical expression to a postfix expression. Your program should accept an infix expression from the user and prints the postfix expression on the screen. Implement the conversion in an isolated function.
3. Manually convert the following infix mathematical expression to their postfix form using the conversion algorithm you studied.
 - $A+B*C-D/E*F$
 - $(A+B*C-D)/(E*F)$
4. Manually calculate the following postfix mathematical expression by applying the evaluation algorithm you studied.
 - $25\ 2\ -\ 3\ +4\ +\ 15\ -$
 - $2\ 10\ 5\ /\ +15\ 16\ 2\ /\ -\ +\ 3\ -$
5. Build on the program you created for problem 2 by adding a function that evaluates a postfix mathematical expression. The program should accept an infix expression then prints the result on the screen. Implement the evaluation of the postfix expression in an isolated function.